

48. (New) The spun-laced nonwoven fabric of Claim 46, wherein:
- a. the fabric has a basis weight of about 40 g/m² to about 100 g/m² per 0.4 mm of thickness, and a thickness of from about 0.1 mm to about 1.0 mm;
 - f. the poly(vinyl alcohol) has a degree of polymerization of from about 1200 to about 2000;
 - g. the fabric has a bursting strength value as measured according to ASTM D3786-87 of greater than 80 psi; and
 - h. the fabric has an air permeability of greater than 150 CFM/sq. ft. when measured by ASTM D737-96.

REMARKS

Claims 8-21, 23, 26, 29-34, 38 and 40-48 are pending in the present application. By this Amendment, claims 1-7, 22, 27-28, 37 and 39 are cancelled; claims 8-21, 23, 26, 29-34 and 38 are amended; and new claims 40-48 are added. Applicants respectfully request reconsideration of the present claims in view of the foregoing amendment and the following remarks.

I. Prior Art Rejections:

Rejection of Claims 1-2, 5, 11-16, 18-20, 29-31, 34 and 37-39 Under 35 U.S.C. §103(a) in View of Honeycutt

In the November 05, 2002 final Office Action, claims 1-2, 5, 11-16, 18-20, 29-31, 34 and 37-39 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,207,873 to Honeycutt (hereinafter "Honeycutt"). This rejection is respectfully traversed.

Applicants' claimed invention, embodied in replacement claim 34, is directed to a spun-laced web consisting essentially of a plurality of pressure liquid entangled poly(vinyl alcohol) fibers, wherein (a) the web is nonwoven; (b) binding adhesives are substantially absent from the web; (c) heat fusion is substantially absent from the web; (d) needlepunching is substantially absent from the web; (e) stitchbonding is substantially absent from the web; (f) the poly(vinyl alcohol) has a degree of polymerization of from about 300 to about 5000; and (g) the web has a bursting strength value as measured according to ASTM D3786-87 of greater than 50 psi when the web has a thickness of 0.4 mm and a basis weight of 70 gsm.

Applicants' claimed invention, embodied in replacement claim 38, is directed to spun-laced web comprising, *inter alia*, a plurality of pressure liquid entangled

poly(vinyl alcohol) fibers, wherein (a) the web is nonwoven; (b) binding adhesives are substantially absent from the web; (c) heat fusion is substantially absent from the web; (d) needlepunching is substantially absent from the web; (e) stitchbonding is substantially absent from the web; (f) the poly(vinyl alcohol) has a degree of polymerization of from about 300 to about 5000; (g) the web has a thickness of from about 0.05 mm to about 2.0 mm and a basis weight of from about 20 gsm to about 400 gsm; and (h) the web has a bursting strength value as measured according to ASTM D3786-87 of greater than 50 psi.

Applicants' claimed invention, embodied in new claim 46, is directed to spun-laced nonwoven fabric comprising, *inter alia*, a plurality of pressure liquid entangled poly(vinyl alcohol) fibers, wherein (a) binding adhesives are substantially absent from the fabric; (b) heat fusion is substantially absent from the fabric; (c) needlepunching is substantially absent from the fabric; (d) stitchbonding is substantially absent from the fabric; (e) the poly(vinyl alcohol) has a degree of polymerization of from about 300 to about 5000; and (f) the fabric has a bursting strength value as measured according to ASTM D3786-87 of greater than 50 psi.

In each of Applicants' independent claims, the claimed spun-laced web or fabric contains at least the following features:

- (1) a plurality of pressure liquid entangled poly(vinyl alcohol) fibers;
- (2) binding adhesives are substantially absent from the web or fabric;
- (2) heat fusion is substantially absent from the web or fabric;
- (3) needlepunching is substantially absent from the web or fabric;
- (4) stitchbonding is substantially absent from the web or fabric;
- (5) the poly(vinyl alcohol) has a degree of polymerization of from about 300 to about 5000; and
- (6) the web or fabric has a bursting strength value as measured according to ASTM D3786-87 of greater than 50 psi.

The teaching of Honeycutt fails to teach or suggest spun-laced webs or fabrics containing each of the above-recited claim features. As noted by Examiner Pratt, the teaching of Honeycutt does disclose nonwoven webs comprising poly(vinyl alcohol) fibers; however, the teaching of Honeycutt does not suggest to one of ordinary skill in the art the claimed webs or fabrics embodied by Applicants' independent claims 34, 38 and 46.

It should be further noted that the teaching of Honeycutt fails to teach or suggest at least the following claim features recited in Applicants' dependent claims:

- (1) a substantially impermeable layer adhered to the claimed web (Claim 18);

(2) a substantially impermeable layer adhered to the claimed web wherein the substantially impermeable layer is polyethylene, polypropylene, polyester, or ethylene/(meth)acrylic acid copolyester (Claim 19);

(3) a coated web comprising the claimed web and a coating on the web, wherein the coating comprises a liquid selected from the group consisting of isopropyl alcohol, water, methyl ethyl ketone, methyl propyl ketone, and acetone (Claim 20);

(4) an article comprising the claimed web, wherein the article is selected from the group consisting of gowns, drapes, and protective apparel (Claim 29);

(5) an article comprising the claimed web, wherein the article comprises an absorbent pad (Claim 30); and

(6) an article comprising the claimed web, wherein the article comprises an article selected from the group consisting of gauze, swabs, towels, and wipes (Claim 31).

For at least the reasons given above, Applicants respectfully submit that the teaching of Honeycutt cannot make obvious Applicants' claimed invention embodied in independent claims 34, 38 and 46. Since claims 8-21, 23, 26, 29-33, 40-45 and 47-48 depend from independent claims 34, 38 and 46, and recite additional claim features, the teaching of Honeycutt cannot make obvious dependent claims 8-21, 23, 26, 29-33, 40-45 and 47-48. Accordingly, withdrawal of the rejection of claims 11-16, 18-20, 29-31, 34 and 38 (claims 1-2, 5, 37 and 39 have been cancelled) under 35 U.S.C. §103(a) as being unpatentable over Honeycutt is respectfully requested.

Rejection of Claims 1-2, 5, 11-16, 18-20, 29-31, 34 and 37-39 Under 35 U.S.C. §103(a) in View of Yamamura

In the November 05, 2002 final Office Action, claims 1-2, 4-7, 9-12, 14-19, 29-31, 34 and 37-39 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,882,780 to Yamamura et al. (hereinafter "Yamamura"). This rejection is respectfully traversed.

A description of Applicants' claimed invention embodied in replacement independent claims 34 and 38 and new independent claim 46 may be relied upon above.

Like the teaching of Honeycutt, the teaching of Yamamura fails to teach or suggest spun-laced webs or fabrics containing each of the above-recited claim features. Further, the teaching of Yamamura fails to teach or suggest spun-laced webs or fabrics consisting essentially of a plurality of pressure liquid entangled poly(vinyl alcohol) fibers as recited in replacement independent claim 34. In fact, as discussed in Applicants' August 12, 2002 Amendment and Response, the disclosed finished nonwoven fabrics in

the teaching of Yamamura (i) must contain elastic polyester fibers, and (ii) do not contain pressure liquid entangled poly(vinyl alcohol) fibers.

For at least the reasons given above, Applicants respectfully submit that the teaching of Yamamura cannot make obvious Applicants' claimed invention embodied in independent claims 34, 38 and 46. Since claims 9-12, 14-19, 29-31, 40-45 and 47-48 depend from independent claims 34, 38 and 46, and recite additional claim features, the teaching of Yamamura cannot make obvious dependent claims 9-12, 14-19, 29-31, 40-45 and 47-48. Accordingly, withdrawal of the rejection of claims 9-12, 14-19, 29-31, 34 and 38 (claims 1-2, 4-7, 37 and 39 have been cancelled) under 35 U.S.C. §103(a) as being unpatentable over Yamamura is respectfully requested.

It should be further noted that the teaching of Yamamura fails to teach or suggest at least the following claim features recited in Applicants' dependent claims:

- (1) a substantially impermeable layer adhered to the claimed web (Claim 18);
- (2) a substantially impermeable layer adhered to the claimed web wherein the substantially impermeable layer is polyethylene, polypropylene, polyester, or ethylene/(meth)acrylic acid copolyester (Claim 19);
- (3) an article comprising the claimed web, wherein the article is selected from the group consisting of gowns, drapes, and protective apparel (Claim 29);
- (4) an article comprising the claimed web, wherein the article comprises an absorbent pad (Claim 30); and
- (5) an article comprising the claimed web, wherein the article comprises an article selected from the group consisting of gauze, swabs, towels, and wipes (Claim 31).

Rejection of Claims 3, 8, 21-23 and 26-33 Under 35 U.S.C. §103(a) in View of Both Honeycutt and Yamamura In Combination With Chen

In the November 05, 2002 final Office Action, claims 3, 8, 21-23 and 26-33 were rejected under 35 U.S.C. §103(a) as being unpatentable over both Honeycutt and Yamamura in combination with U.S. Patent No. 5,990,377 to Chen et al. (hereinafter "Chen"). This rejection is respectfully traversed.

As discussed above, the teachings of Honeycutt and Yamamura each individually fail to teach or suggest claim features recited in Applicants' independent claims 34, 38 and 46. Since claims 3, 8, 21-23, 26 and 29-33 depend from independent claims 34 and 38, and recite additional claim features, the teachings of Honeycutt and Yamamura each individually fail to make obvious dependent claims 3, 8, 21-23, 26 and 29-33.

The Office Action relies on the teaching of Chen to allegedly cure the above-noted deficiencies in the teachings of Honeycutt and Yamamura. However, like the teachings of Honeycutt and Yamamura, the teaching of Chen fails to teach or suggest spun-laced webs or fabrics containing each of the above-recited claim features. In fact, the teaching of Chen fails to even teach or suggest spun-laced webs or fabrics comprising poly(vinyl alcohol) fibers as recited in each of independent claims 34, 38 and 46.

The Office Action appears to rely on the teaching of Chen primarily for the disclosure within Chen directed to aqueous coatings suitable for coating nonwoven fabrics. Applicants respectfully submit that even if the combination of the teachings of Honeycutt, Yamamura and Chen is proper, the combined teaching of Honeycutt, Yamamura and Chen still fails to teach or suggest Applicants' claimed invention.

For at least the reasons given above, Applicants respectfully submit that the combined teaching of Honeycutt, Yamamura and Chen cannot make obvious Applicants' claimed invention embodied in independent claims 34, 38 and 46. Since claims 3, 8, 21-23, 26, 29-33, 40-45 and 47-48 depend from independent claims 34, 38 and 46, and recite additional claim features, the combined teaching of Honeycutt, Yamamura and Chen cannot make obvious dependent claims 3, 8, 21-23, 26, 29-33, 40-45 and 47-48. Accordingly, withdrawal of the rejection of claims 8, 21, 23, 26, 29-33 (claims 3 and 27-28 have been cancelled) under 35 U.S.C. §103(a) as being unpatentable over the combined teaching of Honeycutt, Yamamura and Chen is respectfully requested.

II. Request For Telephone of Personal Interview:

Applicants' representative requests a telephone or personal interview with Examiner Pratt prior to the next office action.

III. Conclusion:

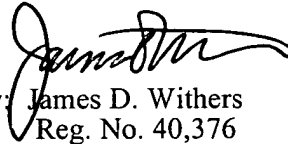
Applicants submit that claims 8-21, 23, 26, 29-34, 38 and 40-48 define patentable subject matter. Accordingly, Applicants respectfully request allowance of these claims.

Should the Examiner believe that anything further is necessary to place the application in better condition for allowance, the Examiner is respectfully requested to contact Applicants' representative at the telephone number listed below.

Amendment And Response
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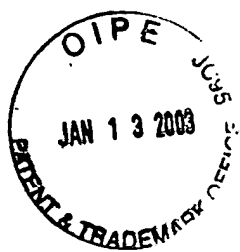
No additional fees are believed due; however, the Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, to Deposit Account No. 13-2725.

Respectfully submitted,
MERCHANT & GOULD, LLC


By: James D. Withers
Reg. No. 40,376

MERCHANT & GOULD, LLC
3200 IDS Center
80 South 80th Street
Minneapolis, Minnesota 55402-2215
404/949-2400

Attorney No. 60086.0058US01



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Patents

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

QIN ET AL.

Serial No.: 09/280,791

Filed: March 26, 1999

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Art Unit: 1771

Examiner: Pratt, C.

M&G No.: 60086.0058US01

For: SPUNLACED POLY(VINYL ALCOHOL) FABRICS

MARKED UP VERSIONS OF CLAIMS ACCOMPANYING APPLICANTS'
JANUARY 13, 2003 REQUEST FOR RCE UNDER 37 CFR 1.114 WITH
SUBMISSION AND AMENDMENT

Applicants provide the following marked up version of the claims, which were amended in Applicants' January 13, 2003 Request for RCE and Amendment filed in response to the November 05, 2002 Office Action. In the amendments below, [brackets] are used to show where terms were removed from the claims, while underlines are used to show where terms were added to the claims.

In The Claims:

Please cancel claims 1-7, 22, 27-28, 37 and 39 without prejudice or disclaimer.

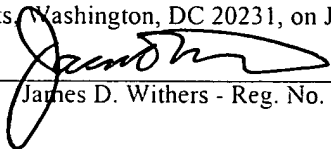
Please amend the claims as follows:

8. (Twice Amended) The web of [claim 1] Claim 34, wherein the poly(vinyl alcohol) has a degree of polymerization of from about 1200 to about 2000.

9. (Twice Amended) The web of [claim 1] Claim 34, wherein the poly(vinyl alcohol) has a degree of hydrolysis greater than 80%.

10. (Twice Amended) The web of [claim 1] Claim 34, wherein the poly(vinyl alcohol) has a degree of hydrolysis greater than 98%.

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail # EV188521077US in an envelope addressed to: Box RCE (Fee), Commissioner for Patents, Washington, DC 20231, on January 13, 2003.


James D. Withers - Reg. No. 40,376

11. (Twice Amended) The web of [claim 1] Claim 34, wherein the poly(vinyl alcohol) fibers have an average denier of from about 1 to about 3 denier.

12. (Twice Amended) The web of [claim 1] Claim 34, wherein the poly(vinyl alcohol) fibers have an average length of from about 30 mm to about 60 mm.

13. (Twice Amended) The web of [claim 1] Claim 34, wherein the poly(vinyl alcohol) fibers are soluble in water above 65°C, and insoluble in water below 65°C.

14. (Twice Amended) The web of [claim 1] Claim 34, wherein the poly(vinyl alcohol) fibers are soluble in water above 90°C, and insoluble in water below 90°C.

15. (Twice Amended) The web of [claim 1] Claim 34, wherein [, after step c,] the web has a thickness of from about 0.3 mm to about 0.6 mm.

16. (Twice Amended) The web of [claim 1] Claim 34, wherein [, after step c,] the web has a [base] basis weight of from about 40 g/m² to about 100 g/m².

17. (Twice Amended) The web of [claim 1] Claim 38, [further] wherein the [poly(vinyl alcohol) fibers are carded along with] web further comprises other pressure liquid entangled fibers selected from the group consisting of polyester, polypropylene, polyethylene, rayon, cellulose, nylon, and ethylene/(meth)acrylic acid copolymer fibers.

18. (Twice Amended) An article comprising the [The] web of [claim 1] Claim 34 [the method further comprises, after step c, adhering] and a substantially impermeable layer adhered to the web.

19. (Twice Amended) The [web] article of [claim 1 wherein the method further comprises, after step c, adhering a] Claim 18, wherein the substantially impermeable layer [to the web, wherein the layer] is polyethylene, polypropylene, polyester, or ethylene/(meth)acrylic acid copolyester.

20. (Twice Amended) A coated web comprising the [The] web of [claim 1] Claim 34 [wherein the method further comprises, after step c, contacting the web with] and a coating on the web, wherein the coating comprises a liquid selected from the group consisting of isopropyl alcohol, water, methyl ethyl ketone, methyl propyl ketone, and acetone.

21. (Twice Amended) A coated web comprising the [The] web of [claim 1] Claim 34 [wherein the method further comprises contacting] and a coating on one or both sides of the web, wherein the coating comprises [with] an aqueous finishing formulation to impart water repellency to the [fabric] web.

23. (Twice Amended) The coated web of [claim 1] Claim 21, wherein the [method further comprises, before step c, contacting the web with an] aqueous finishing formulation [to impart water repellency to the web, wherein the resulting web] comprises:

[a.] (i) from about 0.01 to about 3 wt. % fluorocarbon; and

[b.] (ii) from about 0.01 to about 20 wt. % wax, based on a total weight of the aqueous finishing formulation.

26. (Twice Amended) The web of [claim 1] Claim 34, wherein the web has [having] (i) an air permeability of greater than 150 CFM/sq. ft. when measured by ASTM D737-96; (ii) a flammability rating of IBE or DNI when measured according to ASTM D1230-94; (iii) a water impact penetration less than 1.0 grams when measured by AATCC 42-94; or (iv) a combination of any of (i), (ii), and (iii).

29. (Twice Amended) An article comprising the [The] web of [claim 1] Claim 34, [configured into a] wherein the article [surgical web] is selected from the group consisting of gowns, drapes, and protective apparel.

30. (Twice Amended) An article comprising the [The] web of [claim 1] Claim 34, [configured into] wherein the article comprises an absorbent pad.

31. (Twice Amended) An article comprising the [The] web of [claim 1] Claim 34, [configured into] wherein the article comprises an [absorbent pad] article selected from the group consisting of gauze, swabs, towels, and wipes.

32. (Twice Amended) The [web] article of [claim 1] Claim 31, [configured into] wherein the article comprises a wipe that is at least 25% saturated with a solvent.

33. (Twice Amended) An article comprising the [The] web of [claim 1] Claim 34, [configured into] wherein the article comprises an air filter.

34. (Thrice Amended) A spun-laced web [comprising] consisting essentially of a plurality of pressure liquid entangled poly(vinyl alcohol) fibers, wherein:

- a. the web is nonwoven;
- b. binding adhesives are substantially absent from the web;
- c. heat fusion is substantially absent from the web;
- d. needlepunching is substantially absent from the web; and
- e. stitchbonding is substantially absent from the web;
- f. the poly(vinyl alcohol) has a degree of polymerization of from about 300 to about 5000; and
- g. the web has a bursting strength value as measured according to ASTM D3786-87 [which value is not less] of greater than [a base value corresponding to] 50 psi [as measured on a] when the web [having] has a thickness of 0.4 mm and a [base] basis weight of 70 gsm.

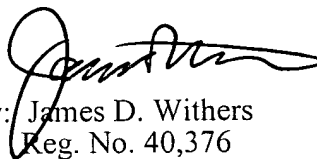
38. (Amended) A spun-laced web comprising a plurality of pressure liquid entangled poly(vinyl alcohol) fibers, wherein:

- a. the web is non-woven;
- b. binding adhesives are substantially absent from the web;
- c. heat fusion is substantially absent from the web;
- d. needlepunching is substantially absent from the web;
- e. stitchbonding is substantially absent from the web;
- f. the poly(vinyl alcohol) has a degree of polymerization of from about 300 to about 5000; [and]
- g. the web has a [tensile strength in the cross direction as measured according to ASTM D5035-95 that is not less than a base value corresponding to 13 pounds as

measured on a one inch strip of a web having a] thickness of from about [0.4] 0.05 mm to about 2.0 mm and a [base] basis weight of from about [70] 20 gsm to about 400 gsm; and
h. the web has a bursting strength value as measured according to ASTM D3786-87 of greater than 50 psi.

New claims 40-48 were added as shown in the accompanying Request for RCE and Amendment.

Respectfully submitted,
MERCHANT & GOULD, LLC


By: James D. Withers
Reg. No. 40,376

MERCHANT & GOULD, LLC
3200 IDS Center
80 South 80th Street
Minneapolis, Minnesota 55402-2215
404/954-5038

Attorney No.: 60086.0058US01